

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : RE 40,340 E
APPLICATION NO. : 08/962971
DATED : May 27, 2008
INVENTOR(S) : Nabil N. Ghaly

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

1. Please replace **FIG. 18** with attached replacement sheet.
2. Please replace **FIG. 23** with attached replacement sheet.
3. Please replace **FIG. 24** with attached replacement sheet.
4. Please include attached new sheet for **FIG. 25**.
5. Please include attached new sheet for **FIG. 26**.
6. Please include attached new sheet for **FIG. 27**.
7. Please include attached new sheet for **FIG. 28**.
8. Please replace the paragraph at column 2, line 52, and
ending at column 2, line 57, with the following paragraph:

In an alternative embodiment shown in FIG. 27, the device comprises a liquid crystal display whereon a plurality of geometric shapes may be depicted and wherein a player attempts to discover a pattern of switch positions that results in a singular geometric shape being depicted at all locations on the liquid crystal display.

9. Please replace the paragraph at column 2, line 58, and
ending at column 2, line 60, with the following paragraph:

In other alternative embodiments, the device comprises an interface module to provide multi-color displays, or images, on an external color video monitor. An example of such embodiments is shown in FIG. 28.

10. Please insert the following new paragraph after the
paragraph ending at column 3, line 41:

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--FIG. 25 indicates two examples of an embodiment, wherein the playing positions are mapped on the surface of a three-dimensional housing such as a sphere, or a cube.

FIG. 26 is a lookup table that illustrates the assignment of the color codes for the 4 x 4 embodiment to two colors.

FIG. 27 indicates an alternate embodiment using keypad switches, and a liquid crystal display screen.

FIG. 28 indicates an alternate embodiment that interfaces with an external video monitor to provide multi-color displays, or a plurality of images.--.

11. Please correct the paragraph at column 7, line 40 and ending at column 7, line 52 as follows:

It should be noted that the aforestated description of an algorithm to assign color codes to playing positions (as shown in **FIGS. 21 & 22**) is provided only as an example, and is not intended to limit the invention herein. As would be obvious to a person skilled in the art, there is almost unlimited number of ways to assign the generated color codes to playing positions. [For example, such assignment could be based on a fixed relationship between generated color codes and playing positions.] It should also be noted that a solution to a game, wherein the objective of the game is to provide the same color or image at all playing positions, is independent of how color codes or display codes are assigned to playing positions.

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12. Please correct the paragraph at column 10, line 44 and ending at column 10, line 51, as follows:

It should be noted that while the above description of the operation of the preferred embodiment employs bi-stable switches to control the routing squares, a routing square could be activated by a keypad switch [i.e., momentary switch,] to toggle it between its two states indicated in **FIGS. 2a & 2b**. [In such a case, the states of a routing square, rather than the states of the bi-stable switch, are used to provide the various functions described for the preferred embodiment] It should also be noted that because a switch is an external device to a microprocessor that controls the operation of the device, and because a routing square is an internal element in the software that executes on the microprocessor, and since the states of a routing square reflect the activation of its associated external switch, it follows that the states of a routing square, rather than the states of an associated switch, are used to provide the various functions described for the preferred embodiment.

13. Please correct the paragraph at column 10, line 52 and ending at column 10, line 61, as follows:

Further, it should [It should also] be noted that the number of colors or images playable by a device is a design choice. [The color codes in the 4x4 embodiment could be assigned to any pre-defined number of visual indications, i.e., to any pre-defined images or colors, including the color reflected from the surface of a display when it is

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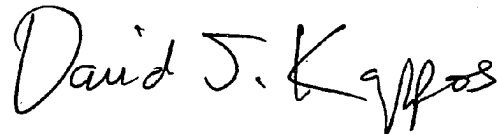
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dark. For the 4x4 embodiment, a person with ordinary skills in the art could employ such assignment to operate the device with 2, 3, 4, or 5 colors or images. Similarly, for the 8x8 embodiment, the number of colors or images could be 2 to 9.] A game designer can vary the number of colors playable by a device by making each of the color codes to correspond to either each of a plurality of predetermined colors or to a dark indication. Similarly, a game designer can vary the number of images playable by a device by making each of the display codes to correspond to either each of a plurality of predetermined images or to a blank display.

Signed and Sealed this

Twenty-fifth Day of August, 2009

A handwritten signature in black ink that reads "David J. Kappos". The signature is written in a cursive, flowing style with a large initial 'D' and 'K'.

David J. Kappos
Director of the United States Patent and Trademark Office

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LEGEND

- N** : DIMENSION OF LOGIC GAME = NUMBER OF PREDETERMINED COLORS WHICH MAY BE DISPLAYED, (EXCLUDED REFLECTED COLOR WHEN DISPLAY IS DARK)
= 4 (FOR THE PREFERRED EMBODIMENT)
- n** : NUMBER OF BINARY BITS IN OPCODE AND COLOR CODE
= $\ln N + 1 = 3$ (FOR THE PREFERRED EMBODIMENT)
- I** : ROW NUMBER I, $I = 1, \dots, N$
- J** : COLUMN NUMBER J, $J = 1, \dots, N$
- DIR** : ROUTE DIRECTION BETWEEN TWO ADJACENT ROUTING SQUARES;
"R" DENOTES RIGHT
"U" DENOTES UP
"L" DENOTES LEFT
"D" DENOTES DOWN
- T** : OPCODE TRANSMITTER; $T = 1, \dots, 2N$
- R** : OPCODE RECEIVER; $R = 1, \dots, 2N$
- RC(T)** : RECEIVER CONNECTED TO TRANSMITTER "T"
- TC(R)** : TRANSMITTER CONNECTED TO RECEIVER "R"
- W(I,J)** : STATUS OF SWITCH LOCATED AT ROW "I" AND COLUMN "J," OR STATUS OF ROUTING SQUARE AT ROW "I" AND COLUMN "J"
- TCODE(T)** : OPCODE AT TRANSMITTER "T"
- RCODE(R)** : OPCODE AT RECEIVER "R"
- C(R)** : COLOR CODE AT RECEIVER "R"
- x(i)** : THE *i*th BIT OF OPCODE "X"
- y(i)** : THE *i*th BIT OF OPCODE "Y"
- cb(i)** : THE *i*th BIT OF COLOR CODE "C"
- C1(I,J)** : COLOR CODE AT THE RIGHT EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- C2(I,J)** : COLOR CODE AT THE TOP EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- C(I,J)** : COLOR CODE SELECTED FOR DISPLAY AT THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- \oplus : EXCLUSIVE OR BOOLEAN FUNCTION
- \odot : EXCLUSIVE NOR BOOLEAN FUNCTION

































EXPLANATION OF PROGRAM VARIABLES OF FIGS. 19 – 22**FIG. - 18 -**





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OPCODE	0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
0 0 0								
0 0 1								
0 1 0								
0 1 1								
1 0 0								
1 0 1								
1 1 0								
1 1 1								

COLOR CODE	1 0 0	1 0 1	1 1 0	1 1 1	0 - -
COLOR					

COLOR ASSIGNMENT FOR N = 4

FIG. - 23 -

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OPCODE	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
0000																
0001																
0010																
0011																
0100																
0101																
0110																
0111																
1000																
1001																
1010																
1011																
1100																
1101																
1110																
1111																

COLOR CODE	1000	1001	1010	1011	1100	1101	1110	1111	0---
COLOR									

COLOR ASSIGNMENT FOR N = 8

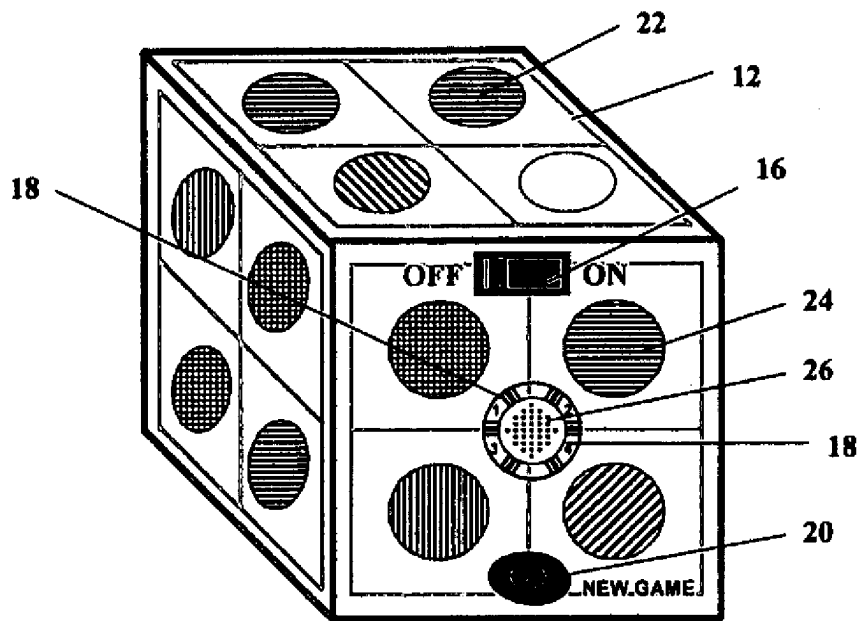
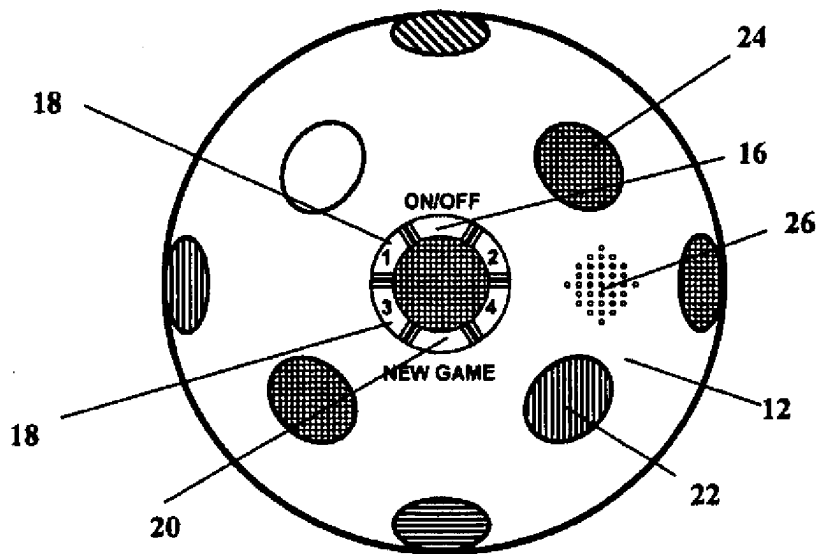
FIG. - 24 -

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MAPPING OF INDICATORS ON 3 DIMENSIONAL CONFIGURATION

FIG. - 25 -

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OPCODE	0	0	0	0	1	1	1	1
	0	0	1	1	0	0	1	1
	0	1	0	1	0	1	0	1
0 0 0								
0 0 1								
0 1 0								
0 1 1								
1 0 0								
1 0 1								
1 1 0								
1 1 1								

COLOR CODE	1 0 0	1 0 1	1 1 0	1 1 1	0 - -
COLOR					

COLOR ASSIGNMENT FOR N = 4
(Color codes assigned to 2 colors)

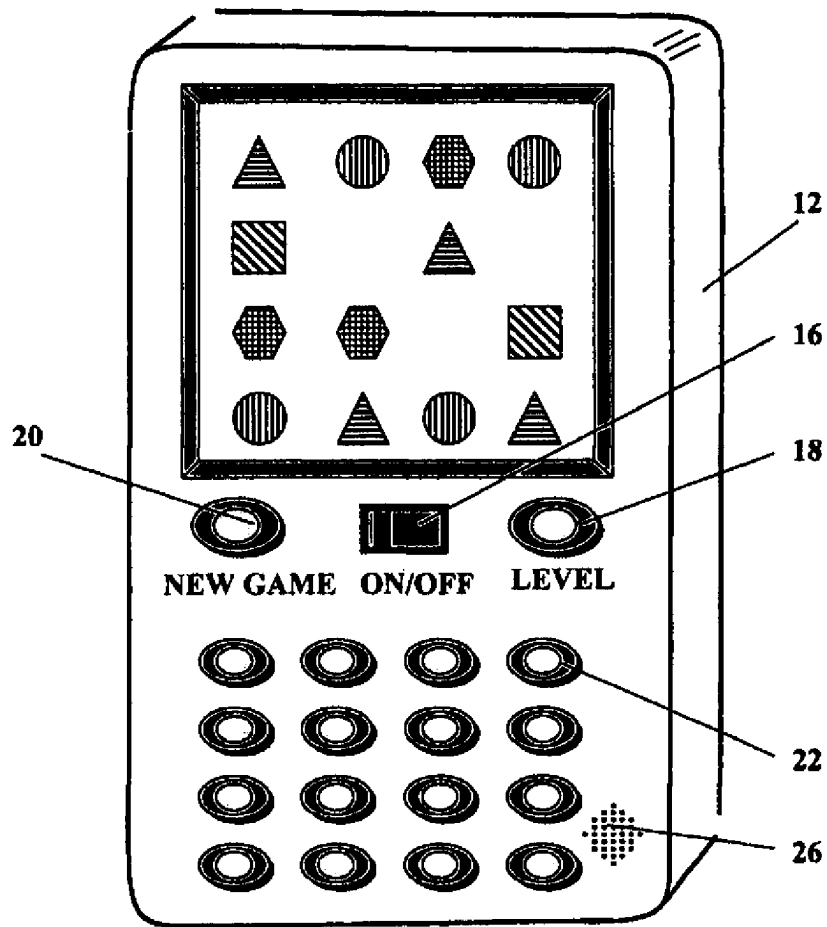
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ALTERNATE EMBODIMENT USING LCD SCREEN

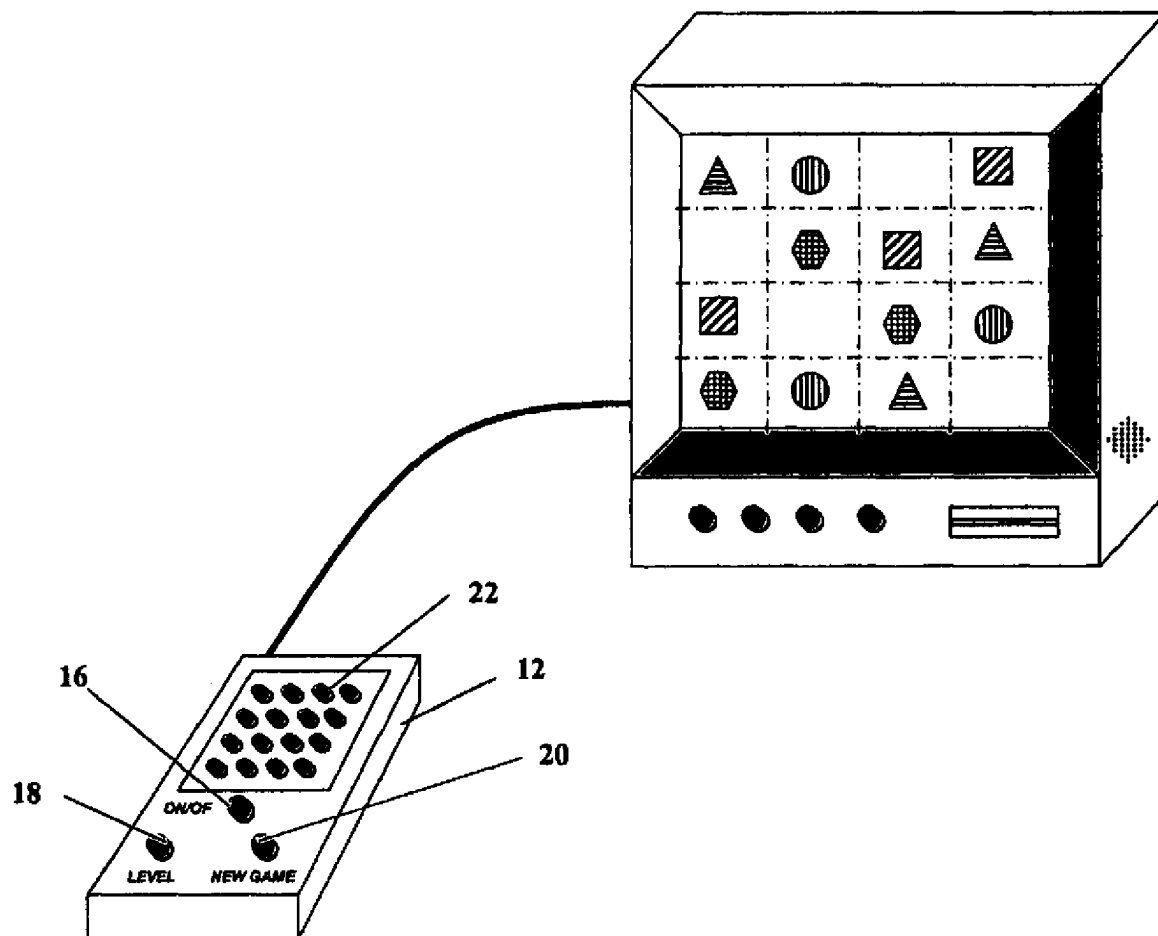
FIG. - 27 -

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CONNECTION TO VIDEO MONITOR

FIG. - 28 -